made a part of economic theory. Material progress was measured by the increase in the quantity of wealth. The essence of social progress, however, is to raise the margin of consumption, to increase the utility of the goods we have, instead of striving for the mere increase in the quantity of goods each part of which would have a lower degree of utility.

When these facts are clearly seen economics becomes the same as the science of utilities. Its theory has at its basis the calculus of pleasures and pains upon which Bentham based his system. But the change affects utilitarianism as deeply as it has economics. It shows that a conscious calculation of pleasures and pains is confined to positive utilities. They alone can be added and subtracted. The absolute utilities are out of its realm and belong to the true field of ethics.

In this way utilitarianism which began as an abstract theory of utilities has become more concrete, and economics which began as a concrete theory of material wealth has lost most of its concrete forms and has become a theory of insatiable wants. The two sciences, therefore, which were separated artificially by past conditions became identical in scope and method and should be merged into one science.

The Genesis of Capital.

BY PROFESSOR JOHN B. CLARK, OF AMHERST COLLEGE.

A recent Austrian theory makes interest to be a premium on goods for present consumption, as compared with goods of like kind and quantity for future consumption. This view cannot be valid

unless capitalists actually compare the subjective value of present goods with that of future goods in all respects similar. This they do not do.

A typical capitalist sets aside from present use a certain amount of wealth expressible in money, intending never to spend the principal so accumulated. He intends to enjoy to the end of his life the annual earnings of his capital, and to bequeath to his descendants the privilege of enjoying them in perpetuity. What the capitalist foregoes is whatever the principal of his savings would have bought for himself; and what he gains as an offset for this abstinence is whatever the annual earnings will buy for himself and for his heirs. The goods sacrificed are different in kind and quantity from the goods that are gained.

Some persons save capital intending later to spend it. They lay aside sums to be used in periods of helplessness or old age. In acquiring the capital they go without goods that to them are luxuries; and in spending it they buy necessaries. The difference between the things that they might have bought now and those that they expect to buy later affords the incentive to saving.

Neither the true capitalist, who creates permanent capital, nor the *quasi*-capitalist, who creates a fund and then consumes it, has any occasion to compare the utility of present goods with that of future goods *of like kind and quantity.*

Professor v. Böhm-Bawerk has tried to use the concept *capital goods* as for scientific purposes identical with that of *capital;* and the basing of interest on goods present and future is the first result of this attempt. What men really compare is present *sums*

with future ones. A capitalist compares one present sum with an endless series of smaller sums accruing in the future.

Capital consists in goods; but a proposition that is true concerning capital is often the opposite of the truth concerning the goods. A water-fall consists of particles of water; yet what is said of the fall cannot be said of the water. The fall is stationary; the particles move. The fall is perpetual; the particles of water pass away to the sea and ultimately evaporate. So capital is perpetual; but the things that at any moment compose it soon pass away.

Capital goods have periods of production. It is possible to mark the instant when a particular bit of matter begins to take a usable shape, and the instant when it renders its last service to production. We may call the interval between these dates its period of production. Yet true capital has no periods. As a whole it does its work with no traceable beginning and no prospect of cessation.

Capital goods interpose periods between labor and the culling of its fruits. True capital annihilates those intervals, and makes the reward of labor to come immediately. A quantity of water now flowing into the upper end of a reservoir may occupy a month in passing through it and reaching the wheel at the lower end. This interval may be regarded as its period of production. Yet if the reservoir be full the inflowing water causes an immediate overflow, and moves the wheel at once. The full pond annihilates the interval between the inflow and its effect.

It may be a year before the hide of an ox will "ripen" into coarse shoes. Labor now expended on the hide will not produce at once finished shoes *made*

of that particular material. Through the aid of capital it produces shoes immediately. The permanence of capital means that in the shoe-making industry there is kept a uniform quantity of raw hide, of tanned leather, and of shoes in all stages of advancement. The furnishing of new raw hide aids in the forward movement of all this material, and creates, as it were, an immediate overflow of finished shoes at the end of the series.

The creating of capital is the securing of a part of this perpetual overflow of usable goods. The process begins at once and ends,—never. The fruits of it accrue chiefly to heirs or successors of the original capitalist. What this capitalist has to mentally compare, when he saves his fund from consumption, is the benefits to be obtained from immediately spending the fund itself, and those to be had from the spending of the endless series of earnings of the fund.

It is possible to tell, in a rude way, what the fund would have been spent for if it had not been saved. It is impossible to tell what the earnings of the fund will be spent for.

It is possible to rudely gauge the benefit to be derived from the things that might have been procured with the fund itself, since this benefit would accrue to the owner, who makes the estimate. It is impossible to measure the benefit that will accrue from the spending of the earnings, since they will be used mainly by heirs and successors of the man who makes the estimate.

There is no difficulty in resolving a benefit to the capitalist himself into a motive for action on the part of the capitalist; but there is grave difficulty in re-

solving benefits accruing to others into a motive for action on one's own part. The strength of the motive for accumulating capital depends on a man's reason and on his altruism. Accumulation stops when a definite present benefit accruing to a man himself constitutes a motive for action outweighing the influence of another motive afforded by the prospect of an endless series of smaller benefits incapable of exact measurement and accruing mainly to the successors of the man whose action is to be influenced.

THE WAGES-FUND AT THE HANDS OF THE GERMAN ECONOMISTS.

BY PROFESSOR F. W. TAUSSIG, OF HARVARD UNIVERSITY.

Professor F. W. Taussig, of Harvard University, presented a paper on the treatment of the Wages-Fund doctrine by German economists. After noting the fact that English economists have paid little attention to the manner in which the Germans have discussed the theory of wages, the development of the wages-fund doctrine in England was briefly sketched, with special reference to Adam Smith and Ricardo. When fairly developed, the doctrine was attacked in 1834 by Hermann in Germany, long before English writers thought of doubting it. Hermann did not deny that wages were paid out of capital, but said that capital was only an intermediate source, and that the real ultimate source from which wages were paid lay in the income of the consumers who bought the products made by the laborers. This doctrine, that the real source of wages lies in consumer's income, has been almost universally accepted